

FORM PTO-1290
(REV 10-2000)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER

P/2803-40

TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. 371

U.S. APPLICATION NO. 097/889073

INTERNATIONAL APPLICATION NO.

PCT/KR00/01306

INTERNATIONAL FILING DATE

November 15, 2000

PRIORITY DATE CLAIMED

11/16/99 & 3/21/2000

TITLE OF INVENTION METHOD OF SIGNALLING ARRIVAL OF A TELEPHONE SIGNAL
BY A DESIRED SOUND AND DOLL'S MOVING AND APPARATUS FOR THE SAME

APPLICANT(S) FOR DO/EO/US

Young Sang CHO, Jae Chul OH and Teck Joo MIN

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This is an express request to promptly begin national examination procedures (35 U.S.C. 371(f)).
4. ☐ The US has been elected by the expiration of 19 months from the priority date (PCT Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☐ is attached hereto (required only if not communicated by the International Bureau).
 - b. ☒ has been communicated by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. ☐ are attached hereto (required only if not communicated by the International Bureau).
 - b. ☐ have been communicated by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☐ have not been made and will not be made.
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11 to 16 below concern document(s) or information included:

11. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☒ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☐ A FIRST preliminary amendment.
☐ A SECOND or SUBSEQUENT preliminary amendment. EXPRESS MAIL CERTIFICATE
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information:
Print EFS Form
5 Drawing sheets (Figs. 1-5)

I hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail Post Office to Addressee (mail label EL855845936US in an envelope addressed to: Asst. Commissioner for Patents, Washington, D.C. 20231, on July 11, 2001.

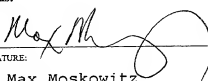
Dorothy Jenkins

Name of Person Mailing Correspondence

Dorothy Jenkins
Signature

July 11, 2001

Date of Signature

U.S. APPLICATION NO. 097889073		INTERNATIONAL APPLICATION NO. PCT/KR00/01306		ATTORNEY'S DOCKET NUMBER P/2803-40	
17 <input checked="" type="checkbox"/> The following fees are submitted: BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) : Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO \$1000.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO \$860.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$710.00 International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4) \$690.00 International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4) \$100.00 ENTER APPROPRIATE BASIC FEE AMOUNT =				CALCULATIONS PTO USE ONLY	
				\$ 1,000.00	
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	14 - 20 =	0	X \$18.00	\$	
Independent claims	2 - 3 =	0	X \$80.00	\$	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ \$270.00	\$	
TOTAL OF ABOVE CALCULATIONS =				\$ 1,000.00	
<input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.				\$ 500.00	
SUBTOTAL =				\$ 500.00	
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				\$	
TOTAL NATIONAL FEE =				\$ 500.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property				\$ 40.00	
TOTAL FEES ENCLOSED =				\$ 540.00	
				Amount to be refunded: \$	
				charged: \$	
a. <input checked="" type="checkbox"/> A check in the amount of \$ <u>540.00</u> to cover the above fees is enclosed. Check No. 5538					
b. <input type="checkbox"/> Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees. A duplicate copy of this sheet is enclosed.					
c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>15-0700</u> . A duplicate copy of this sheet is enclosed.					
NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.					
SEND ALL CORRESPONDENCE TO: OSTROLENK, FABER, GERB & SOFFEN, LLP 1180 Avenue of the Americas New York, NY 10036-8403 Tel: (212) 382 0700					
				SIGNATURE:  Max Moskowitz	
				NAME: 30,576	
REGISTRATION NUMBER					

5/pct

09/889073

PCT/KR00/01306

JC18 Rec'd PCT/PTO 1 1 JUL 2001

METHOD OF SIGNALLING ARRIVAL OF A TELEPHONE SIGNAL BY A
DESIRED SOUND AND DOLL'S MOVING AND APPARATUS FOR THE
SAME

5

Technical field of the Invention

The present invention relates to a call arrival reporting method and apparatus, and more particularly to a method of visually and aurally reporting a call arrival by a recorded sound or music and by a toy's movement when a caller
10 calls from the outside and a telephone for the same.

Description of the Background Art

Consumers' tastes in products keep changing variously. Generally speaking, the young generation sensitive to a trend tends to pay attention to a newer product different from the existing ones. This tendency also applies to
15 telephones. A telephone which does not have distinguishable features from other telephones rarely attracts consumers' attention and cannot successfully compete with them. It is therefore necessary to make a telephone which can stimulate consumers' interest in purchase.

Telephones have been improved by feasible features added thereto.
20 However, a reporting method of an incoming call has been maintained without changes from a conventional fashion. Conventional telephones merely output a tedious bell prepared by telephone manufacturers or enable keypad buttons to be emitted concurrently with the bell. As a result, these conventional telephones cannot meet the consumers' need for listening to a wanted music or sound
25 prerecorded in their telephones when the call is received. In this regard, the

conventional telephones should have extra means to satisfy such need.

In addition, it can be said that consumers' curiosity will be strongly stimulated if a call arrival is reported by a means other than a sound. An exemplary means is a stuffed doll or other forms of toys (hereinafter called "a toy"), connected to a telephone, for reporting the call arrival by a movement such as a dance. Therefore, it is also necessary to improve a configuration of the conventional telephones.

Disclosure of Invention

10 The present invention has been made to solve the problem of the prior art, and accordingly, it is an object of the present invention to provide a method and telephone of visually and aurally reporting a call arrival by recording a user's favorite music or sound instead of a tedious bell in the telephone and by reproducing the prerecorded sound concurrently with a toy's dance at a
15 requested step of a call connection.

To achieve this object, the present invention provides a telephone for visually and aurally reporting a call arrival to a user, the telephone comprising: a speaker for outputting a sound; a power source for providing a driving power; a mode selector for selecting an operation mode between a record mode and a
20 reproduction mode; an arrival detector for generating an arrival detecting signal by detecting a call connection signal applied through a telephone line; a sound source for providing a sound source signal to be reproduced through the speaker while the call connection signal is detected; a sound source recorder/reproducer, according to a selected state of said mode selector, for
25 recording the sound source signal provided from the sound source or for reproducing the recorded sound source signal through the speaker in response

to the arrival detecting signal; and a toy body for performing a predetermined movement by receiving the driving power in response to the arrival detecting signal.

The toy body comprises a toy, a motor for producing a rotating force by receiving the driving power in response to the generation of the arrival detecting signal, and a gear assembly for enabling the toy to perform the predetermined movement by transferring the driving power of the motor to a predetermined part of the toy.

An exemplary configuration of the sound source may comprise a microphone for providing a user's voice to the sound source recorder/reproducer by transforming the voice into an electric sound source signal and a start switch that the sound source recorder/reproducer instructs a start of recording the sound source signal provided from the microphone. Another configuration of the sound source may comprise a sound source transmitter for transmitting a predetermined electric sound source signal applied through the telephone line to the sound source recorder/reproducer and a start switch that the sound source recorder/reproducer instructs a start of recording the predetermined sound source signal provided from the sound source transmitter.

This invention also provides a method for visually and aurally reporting a call arrival to a user by use of a telephone comprising a toy body performed by a driving power and a sound source recorder/reproducer for recording/reproducing a sound source signal. The method comprises the steps of: recording, as a form of a digital signal in the sound source recorder/reproducer, a first sound source signal transmitted through a telephone line and/or a second sound source signal produced by a microphone; detecting a call connection signal applied through

the telephone line; in response to a detection of the call connection signal, reporting the call arrival as a sound by transforming the first or second sound source signal recorded in the sound source recorder/reproducer into an analog signal and reproducing the transformed analog signal through a speaker; and in
5 response to the detection of the call connection signal, reporting the call arrival with a movement of the toy body by enabling the toy body to perform a predetermined movement by applying the driving power to the toy body.

It is preferred to determine whether the sound source recorder/reproducer performs a record operation or a reproduction operation
10 according to which mode in a mode selecting switch the user has selected between a record mode and a reproduction mode. An output of a call arrival reporting sound and the toy's movement are meant to occur, only during which the call connection signal continues, by stopping the sound reproduction through the speaker and the provision of the driving power to the toy body by detecting
15 an extinguishing point of the call arrival signal.

Brief Description of Drawings

The above objects and other advantages of the present invention will become more apparent by describing in detail embodiments thereof with
20 reference to the attached drawings in which:

FIG. 1 is a block diagram showing a configuration of a call arrival reporting apparatus according to a preferred embodiment of the present invention;

FIG. 2 is a block diagram showing a detailed configuration of a telephone
25 having a function of reporting a call arrival according to a preferred embodiment of the present invention;

FIG. 3 is a plane view showing the exterior of the telephone having a

function of reporting the call arrival according to a preferred embodiment of the present invention;

FIG. 4 is an example showing a state that a toy body is installed in a toy installation hole provided in an upper part of the telephone of FIG. 3; and

FIG. 5 is a flow chart showing a procedure of reporting the call arrival according to a preferred embodiment of the present invention.

Best Mode for Carrying Out the Invention

The above object and other advantages of the present invention will become more apparent by describing in detail a preferred embodiment thereof with reference to the attached drawings.

FIG. 1 is a block diagram showing a configuration of a call arrival reporting apparatus according to a preferred embodiment of the present invention. The call arrival reporting apparatus includes a sound source recorder/reproducer 18 for recording a sound source signal or for reproducing the recorded signal when an arrival of a call connection signal is detected, a mode selector 16 for selecting an operation mode of the sound source recorder/reproducer 18, a sound source 12 for providing a sound source signal to be prerecorded in the sound source recorder/reproducer 18, and a speaker 20 for outputting the sound source signal provided by the sound source recorder/reproducer 18 as a sound.

An example of the sound source 12 is a microphone which provides a user's voice to the sound source recorder/reproducer 18 by transforming the voice into an electric sound source signal. Another example as shown in FIG. 1 is a sound source transmission circuit that transmits the electric sound source

signal provided from an external sound source providing device (not shown) through a telephone line, i.e., a call input line 10, to the sound source recorder/reproducer 18. The sound source 12 further comprises an operation start switch that instructs a start of a record operation of the sound source recorder/reproducer 18, so that the sound source signal outputted from the microphone or the sound source transmission circuit can be recorded in the sound source recorder/reproducer 18 at a wanted time.

The sound source recorder/reproducer 18 basically operates as two operation modes: one is a record mode recording the sound source signal and the other is a reproduction mode reproducing the prerecorded sound source signal. The mode selector 16 selects which operation mode the sound source recorder/reproducer 18 should operate. Accordingly, the mode selector 16 can be formed as a mode selecting switch.

This call arrival reporting apparatus also comprises a toy body for reporting the call arrival by performing various motions or movements when the arrival of the call connection signal is detected. The toy body is formed with: a toy 26 whose head and respective arms and legs can move independently; a gear assembly 24, installed inside the trunk of the toy and connected to the head and the respective arms and legs, which enables the head and the arms and legs to move by use of a rotating force transferred from a motor 22; and the motor 22 that transfers, by receiving a driving power, the rotating force to the gear assembly 24. The toy body is only an exemplary means for reporting the detected arrival of the call connection signal to the user by means of motions or movements such as a dance. Therefore, the toy should be interpreted to a broad extent that anything attracting the user's attention can fall within the

meaning of the toy.

The call arrival reporting apparatus further includes: an arrival detector 14 which detects if the call connection signal is applied through the telephone line, that is, the call input line 10; a motor 22 of the toy body; the sound source recorder/reproducer 18; and a power source 28 for providing the driving power required for other components. The power source 28 may have a voltage regulator, connected to an adaptor 30 that transforms a commercial alternating current (AC) voltage into a direct current (DC) voltage, which outputs an adjusted DC voltage by adjusting a level of the DC voltage to a degree that each component of the call arrival reporting apparatus requires.

FIG. 2 is a block diagram showing a detailed configuration of a telephone having a function of reporting the call arrival according to a preferred embodiment of the present invention. The telephone of FIG. 2, concurrent with a more embodied constitution than the call arrival reporting apparatus represented in FIG.1, includes generic signal processing circuits incorporated in a conventional telephone.

The generic signal processor of the telephone can be configured as follows. A line connector 108 with a ring terminator and a tip terminator which are connected to the telephone line connects a rectifier 110 and a ringer IC 134. The rectifier 110 is connected to a sound source transmission circuit 112 to which a dialer IC 114 and a keypad 116 are connected consecutively. The sound source transmission circuit 112 is connected to an amplifier 118 and a telephone jack 124. A microphone 120 and a speaker 122 are connected to the amplifier 118. The telephone jack 124 provides connection terminals for an ear microphone and a handset 126. A transformer 136 is connected between the

ringer IC 134 and the speaker 122. A hook switch SW1 is intervened between the rectifier 110 and the sound source transmission circuit 112. A tone/pulse switch SW2 is connected to the dialer IC 114. The telephone of FIG. 2 can function as a generic telephone by an operation of the above respective components.

As mentioned above, the telephone of FIG. 2 further includes circuits for reporting the call arrival. A voltage regulator 140 is connected to a terminal of an adaptor 30 as a means, corresponding to the power source 28 of FIG. 1, for providing the driving power to the motor 22 and a sound source IC 144 of the toy body. When the adaptor 30 provides the voltage regulator 140 with a DC voltage, for example, 12V transformed from a commercial AC power inputted to the adaptor 30, the voltage regulator 140 outputs an operation voltage, required by each component, as a lowered DC voltage, for example, 5V. A relay 142 is connected to an output end of the voltage regulator 140.

As corresponds to the arrival detector 14 of FIG.1, there are provided: a photo coupler 128, connected to the line connector 108, for outputting an electric signal while the call connection signal is applied; an operational amplifier 130 for amplifying an output signal of the photo coupler 128; and a switching 132 for producing an arrival detecting signal by being inputted with the output signal of the operational amplifier 130.

Further, as corresponds to the sound source recorder/reproducer 18 of FIG. 1, the following is provided in order to visually and aurally report the arrival when the call connection signal is detected: the sound source IC 144, having a function of recording the sound source signal or reproducing the prerecorded sound source signal; a microphone 146; a speaker 148; a start switch SW3 for

instructing a start of a record operation of the sound source IC 144; and an operation mode of the sound source IC 144, that is, a mode selecting switch SW4 for selecting either the record mode or the reproduction mode.

In addition to a power source port for being inputted by the power source,
5 the above sound source IC 144 at least has three input ports of a reproduction/record port (P/R), an operation start port (CE) and an audio signal input port (ANA_IN), and one output port to be connected to the speaker 148. The reproduction/record port (P/R) is connected to the mode selecting switch SW4, the operation start port (CE) is connected to the start switch SW3, and the
10 audio signal input port (ANA_IN) is connected to the sound source transmission circuit 112 and the microphone 146.

The telephone of FIG. 2 also adopts a PNP transistor Q1 as a means of controlling provision for a driving power of 5V for the motor 22. The PNP transistor Q1 is connected to the switching 132 and the sound source IC 144 so
15 as to be turned ON when the mode selecting switch SW4 is selected as a reproduction mode and the switching 132 outputs the arrival detecting signal by detecting the call connection signal.

FIG. 3 is a plane view showing the exterior of a telephone 200 having a function of reporting the call arrival according to a preferred embodiment of the
20 present invention. A telephone case 204 accommodates the respective components represented in FIG. 2 therein and disposes a keypad 206 and speaker sound exit holes 208 and microphone sound entrance holes 210 on the front surface thereof. Further, a toy installation hole 202 for mounting the toy body therein is disposed on an upper part of the telephone case 204. A plurality
25 of terminals including power source terminals 212a and 212b for being

connected to a power source input end of the motor 22 are disposed on a sidewall of the toy installation hole 202.

FIG. 4 is an example showing a state that a toy body 300 is installed in the toy installation hole located on the upper part of the telephone of FIG. 3. The toy body 300 comprises a trunk 302 in which the motor 22 and a gear assembly 24 are installed and a lower base 304 for being mounted on a telephone 200 by being inserted into the toy installation hole 202 prepared in a telephone installation base 214. The gear assembly 24 is connected to a head 310, arms 308a and 308b, and legs 306a and 306b to which the rotating force of the motor 22 can be transferred. The toy body of FIG. 4 is only an example representing a skeleton of the toy. The toy body may be changed to another form by wrapping the skeleton with clothes or by stuffing other material inside. The movements thereof may also be changed to a different fashion according to configurations of the gear assembly 24.

FIG. 5 is a flow chart showing a procedure of reporting a call arrival according to a preferred embodiment of the present invention. By referring to this, a configuration of the telephone according to the present invention is explained.

An operation of the telephone changes according to a predetermined state of the mode selecting switch SW4, whether the record mode or the reproduction mode.

The record mode is explained first. The user needs to prerecord in the sound source IC 144 a desired sound (or voice) source for reporting the call arrival through the speaker 148 when the call connection signal arrives. This sound source can be provided through the microphone 146 by the user or

through the sound source transmission circuit 112 from the outside.

The microphone 146 can be used when a telephone line is not busy, that is, when the hook switch SW1 is in an on-hook state. In this case, the user presses the start switch SW3 after setting the mode selecting switch SW4 as the record mode. Then, an output signal of the microphone 146 is provided to the sound source IC 144. The sound source IC 144 records in an inner memory (not shown) a voice signal provided from the microphone 146 by transforming the voice signal into a digital signal.

When the line is busy, that is, the hook switch SW1 is in an off-hook state, a sound source transferred from the outside through the sound source transmission circuit 112 can be recorded. The sound source signal transferred from the outside through the telephone line passes the sound source transmission circuit 112 and is inputted to the ANA_IN port of the sound source IC 144. At this time, the user selects the mode selecting switch SW4 as the record mode. While the user is pressing the start switch SW3, the above sound source signal inputted to this ANA_IN port is recorded in the sound source IC 144 by being transformed into a digital signal (Steps S10, S12 and S14).

After prerecording the sound source signal in the sound source IC 144, the user selects the mode selecting switch SW4 as the reproduction mode. When the arrival of the call connection signal is detected, the telephone makes arrival reporting signals visually and aurally as described below (Steps S10, S16, S18 and S20).

When a caller makes a call from the outside to the telephone of this invention, a call connection signal through the telephone line is transferred to the line connector 108.

In a case that the telephone is not connected to the adaptor 30, the sound source IC 144 or the motor 22 cannot operate since an output voltage of the voltage regulator 140 is 0V and it is impossible for the sound source IC 144 and the motor 22 to be supplied the operation voltage of 5V from the voltage regulator 140. While the receiver 126 of the telephone is hung up, that is, the hook switch SW1 is off, the call connection signal is applied to the ringer IC 134, and in response to the application, the ringer IC 134 enables a bell to ring by outputting a bell signal and transferring the bell signal to the speaker 122 through the transformer 136.

In a state that the telephone is connected to the adaptor 30, the voltage regulator 140 outputs a voltage of 5V and provides the voltage to each component, such as the sound source IC 144, the motor 22 and the photo coupler 128, which requires an operation power source. At this time, the relay 142 becomes excited by the output voltage of 5V of the voltage regulator 140, so that the bell cannot ring by electrically disconnecting the ringer IC 134 with the voltage regulator 136 and by not transferring the bell signal outputted from the ringer IC 134 to the speaker 122. When the call connection signal reaches the line connector 108 under this state, the photo coupler 128 becomes turned on and outputs a predetermined electric signal and, then, this electric signal is transferred to the switching 132 by being amplified by the operational amplifier 130. In the switching 132, when the amplified signal is applied, an arrival detecting signal of a low level is provided to the operation start port CE of the sound source IC 144. When 5V is applied across the reproduction/record port (P/R) while 0 V is applied across the operation start port (CE), the sound source IC 144 outputs a sound for reporting an arrival by transforming a prerecorded

sound source data into an analog signal and providing the analog signal to the speaker 148. Concurrent with this, a low level signal from the switching 132 has a switching transistor Q1 turned on so that the operating voltage 5V can be applied to the motor 22. As a result, the motor 22 generates a rotating force and
5 the generated rotating force is transferred to the arms 308a and 308b, the legs 306a and 306b and the head 310 through the gear assembly 24, so that the toy performs various movements. At this time, the switching transistor Q1 should be selected by taking an operating current of the motor 22 into account. The user is notified of the arrival through the call arrival sound outputted from the speaker
10 148 and the toy's movements.

When the user lifts the receiver 126 after being notified of the call arrival as in the above manner, the hook switch SW1 becomes an on state and is transformed into a telephone conversation mode. In the telephone conversation mode, a caller's voice is transferred to the receiver 126 through the line
15 connector 108, the sound source transmission circuit 112 and the telephone jack 124, and a user's voice is transferred to the outside in reverse order, so that a telephone conversation between the two parties occurs.

On the other hand, the toy body can be installed in a different manner from the one that the toy body is mounted on the telephone case 204 as
20 represented in FIG. 4. For example, the toy body is independently installed by being removed from the telephone case 204. It is applicable that by use of a power supply line (not shown), that is, the motor 22 of the toy body and the power supply line of the telephone 200 are connected to receive the driving power. In addition, a light-emitting device can be added to the rest of the power
25 source terminals 212 to emit a light when a call is received.

Further, a telephone circuit having a function of visually and aurally reporting the arrival as illustrated in FIGS. 1 and 2, by being embodied as a print circuit board, may be installed inside the toy body. The keypad 206 is disposed on an external location of the toy body 300, for example, the lower base 304, and the connection terminal is exposed outside to be connected the adaptor 30 and the line connector 108. This configuration does not require for an extra telephone case of FIG. 4 since the toy body 300 itself acts as a telephone and as an arrival reporter.

10 Industrial Applicability

A call arrival bell used in the conventional telephones is too tedious to become a boring or annoying sound. In this regard, the telephone according to the present invention always seems to be anew since the call arrival reporting sound can be changed at any time. Moreover, this telephone stimulates the curiosity of the user and delights the user by outputting a wanted sound prerecorded by the user, concurrently with performing a toy's movement.

Although the preferred embodiments of the invention have been described, it will be understood by those skilled in the art that the present invention should not be limited to the described preferred embodiments, but various changes and modifications can be made within the spirit and scope of the invention as defined by the appended claims.

CLAIMS

1. A telephone for visually and aurally reporting a call arrival to a user,
the telephone comprising:

- 5 a speaker for outputting a sound;
- a power source for providing a driving power;
- a mode selector for selecting an operation mode between a record mode
and a reproduction mode;
- an arrival detector for generating an arrival detecting signal by detecting a
10 call connection signal applied through a telephone line;
- a sound source for providing a sound source signal to be reproduced
through said speaker while said call connection signal is detected;
- a sound source recorder/reproducer, according to a selected state of
said mode selector, for recording said sound source signal provided from said
15 sound source or for reproducing the recorded sound source signal through said
speaker in response to said arrival detecting signal; and
- a toy body for performing a predetermined movement by receiving said
driving power in response to said arrival detecting signal.

- 20 2. The telephone for visually and aurally reporting the call arrival as
claimed in Claim 1, wherein said toy body comprises a toy; a motor for
producing a rotating force by receiving said driving power in response to the
generation of said arrival detecting signal; and a gear assembly for enabling
said toy to perform said predetermined movement by transferring said driving
25 power of said motor to a predetermined part of said toy.

3. The telephone for visually and aurally reporting the call arrival as claimed in Claim 1, wherein said sound source comprises a microphone for providing a user's voice to said sound source recorder/reproducer by transforming the voice into an electric sound source signal and a start switch that said sound source recorder/reproducer instructs a start of recording said sound source signal provided from said microphone.

4. The telephone for visually and aurally reporting the call arrival as claimed in Claim 3, wherein said sound source recorder/reproducer comprises a sound source IC for recording said sound source signal and reproducing the recorded sound source signal, said sound source IC at least having a first input port connected to said mode selector, a second input port commonly connected to said arrival detector and said start switch, a third input port connected to said microphone, and an output port connected to said speaker,

wherein, when said mode selector is selected as the record mode, said sound source recorder/reproducer records an inputted sound source signal provided by said microphone through said the third input port by transforming the inputted sound source signal into a digital signal in response to a record start signal of said start switch applied through said second input port, and

wherein, when said mode selector is selected as the reproduction mode, said sound source recorder/reproducer outputs the recorded sound source signal to said speaker through said output port by transforming the recorded sound source signal into an analog signal in response to the arrival detecting signal of said arrival detector applied through said second input port.

5. The telephone for visually and aurally reporting the call arrival as claimed in Claim 1, wherein said sound source comprises a sound source transmitter for transmitting a predetermined electric sound source signal applied through said telephone line to said sound source recorder/reproducer and a start switch that said sound source recorder/reproducer instructs a start of recording said predetermined sound source signal provided from said sound source transmitter.

6. The telephone for visually and aurally reporting the call arrival as claimed in Claim 5, wherein said sound source recorder/reproducer comprises a sound source IC for recording said sound source signal and reproducing the recorded sound source signal, said sound source IC at least having a first input port connected to said mode selector, a second input port commonly connected to said arrival detector and said start switch, a third input port connected to said sound source transmitter, and an output port connected to said speaker,

wherein, when said mode selector is selected as the record mode, said sound source recorder/reproducer records an inputted sound source signal provided by said sound source transmitter through said the third input port by transforming the inputted sound source signal into a digital signal in response to a record start signal of said start switch applied through said second input port, and

wherein, when said mode selector is selected as the reproduction mode, said sound source recorder/reproducer outputs the recorded sound source signal to said speaker through said output port by transforming the recorded

sound source signal into an analog signal in response to the arrival detecting signal of said arrival detector applied through said second input port.

7. The telephone for visually and aurally reporting the call arrival as
5 claimed in Claim 1, wherein said arrival detector comprises a photo coupler for outputting an electric signal while said call connection signal is applied by being connected to said telephone line, an amplifier for amplifying said electric signal, and a switching providing said sound source recorder/reproducer with said arrival detecting signal produced in response to an output signal of said
10 amplifier.

8. The telephone for visually and aurally reporting the call arrival as
claimed in Claim 1, further comprising a telephone case in which respective components of said telephone are installed, an installation hole for detachably
15 installing said toy body is disposed on an upper part, and a power source terminal for providing said driving power to a predetermined part of said toy body in said installation hole is installed.

9. The telephone for visually and aurally reporting the call arrival as
20 claimed in Claim 1, further comprising a telephone case for installing respective components of said telephone, said toy body being separately installed from said telephone case and being connected to said power source through a power supply line for receiving said driving power.

25 10. The telephone for visually and aurally reporting the call arrival as

claimed in Claim 1, wherein said toy body acts as a telephone case by installing said speaker, said power source, said mode selector, said arrival detector, said sound source and said sound source recorder/reproducer which are mounted and are connected with each other on a print circuit board.

5

11. The telephone for visually and aurally reporting the call arrival as claimed in Claim 1, wherein said arrival detector stops a reproduction operation of said sound source recorder/reproducer and simultaneously produces a disable signal blocking a provision of the driving power to said toy body.

10

12. A method for visually and aurally reporting a call arrival to a user by use of a telephone comprising a toy body performed by a driving power and a sound source recording/reproducing means for recording/reproducing a sound source signal, the method comprising the steps of:

15 recording, as a form of a digital signal in said sound source recording/reproducing means, a first sound source signal transmitted through a telephone line and/or a second sound source signal produced by a microphone;

detecting a call connection signal applied through said telephone line;

in response to a detection of said call connection signal, reporting the call
20 arrival as a sound by transforming said first or second sound source signal recorded in said sound source recording/reproducing means into an analog signal and reproducing the transformed analog signal through a speaker; and

in response to the detection of said call connection signal, reporting said call arrival with a movement of said toy body by enabling said toy body to
25 perform a predetermined movement by applying said driving power to said toy

body.

13. The call arrival reporting method as claimed in Claim 12, wherein whether said sound source recording/reproducing means performs a record
5 operation or a reproduction operation is determined according to which mode in a mode selecting switch the user has selected between a record mode and a reproduction mode.

14. The call arrival reporting method as claimed in Claim 12, further
10 comprising a step, by detecting an extinguishing point of said call arrival signal, for stopping the sound reproduction through said speaker and the provision of the driving power to said toy body.

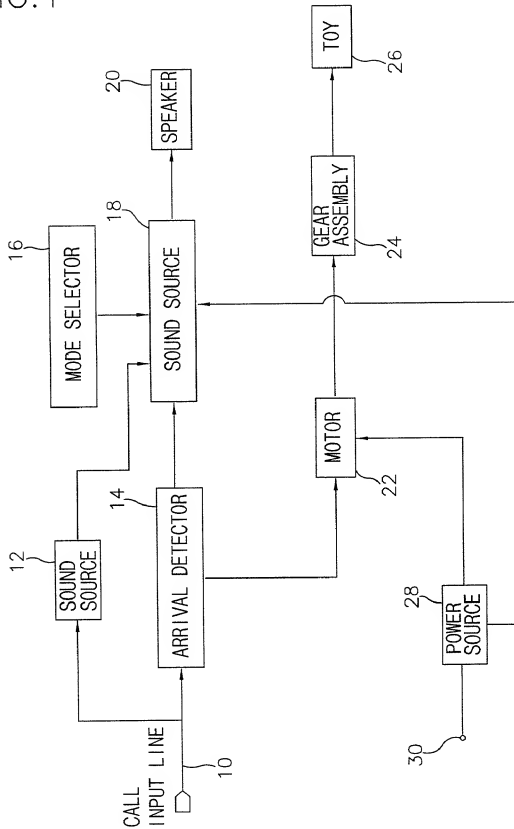
15

ABSTRACT

Disclosed is a method and apparatus of visually and aurally reporting a call arrival by prerecording a user's favorite music or sound in a telephone and reproducing the prerecorded sound concurrently with a toy's dance at a requested step of a call connection. The user selects a record mode by use of a mode selecting switch and records in a sound source IC an arrival reporting sound provided from the outside or through a microphone. When using, the user selects the mode selecting switch as a reproduction mode. When an arrival detector detects an arrival of a call connection signal and transfers the detected signal to the sound source IC, the sound source IC outputs a sound source signal of the prerecorded arrival reporting sound through a speaker. Concurrent with this, a toy body in which a motor and a gear assembly that are connected to the head, arms and legs of the toy are installed is connected to a power source of the telephone, so that the motor is provided with a driving power when the arrival of the call connection signal is detected. Detecting the arrival, the motor is driven and, by means of a rotating force thereof, the toy performs a movement to report the arrival.

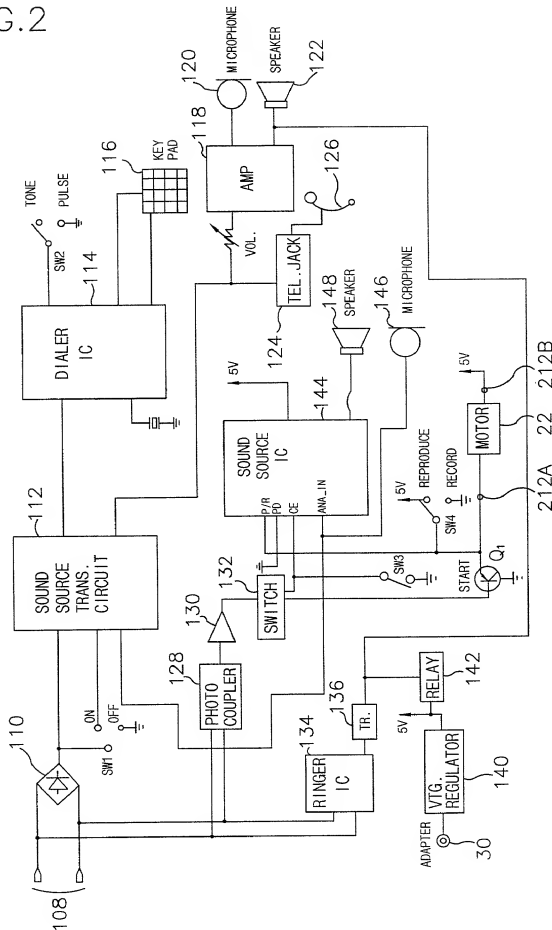
1/5

FIG. 1



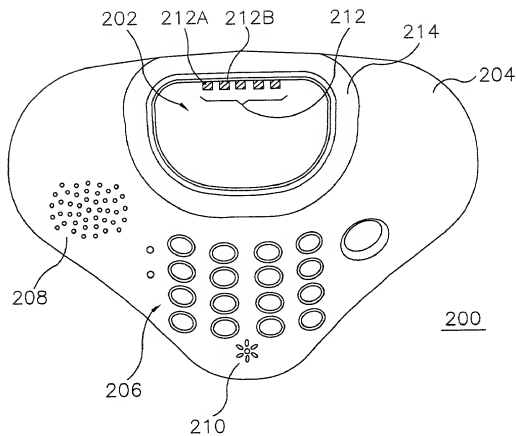
2/5

FIG.2



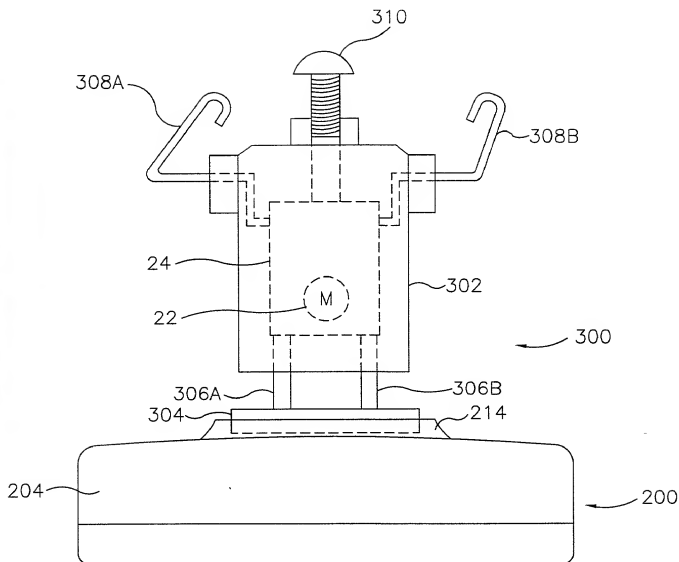
3/5

FIG. 3



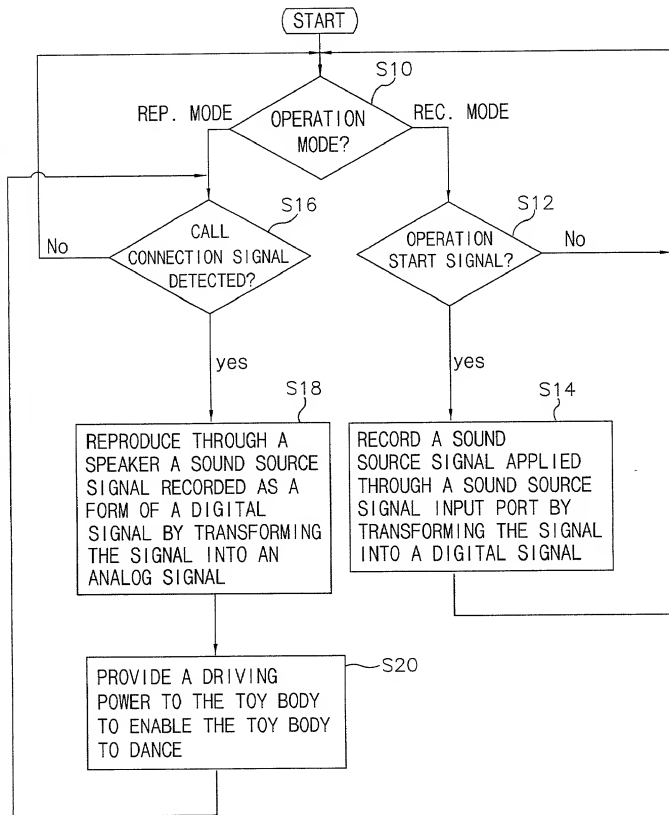
4/5

FIG. 4



5/5

FIG.5



UNITED STATES OF AMERICA COMBINED DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION		US PCT FILE NO. P/2803-40																																																													
<p>As a below named inventor, I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; that I verily believe that I am the original, first and sole inventor (if only one name is listed below) or a joint inventor (if plural inventors are named) of the subject matter which is claimed and for which a patent is sought on the invention entitled:</p> <p style="text-align: center;">METHOD OF SIGNALLING ARRIVAL OF A TELEPHONE SIGNAL BY A DESIRED SOUND AND DOLL'S MOVING AND APPARATUS FOR THE SAME</p> <p>the specification of which is attached hereto, unless the following box is checked:</p> <p><input type="checkbox"/> was filed on <u>November 15, 2000</u>, United States patent Application Number or PCT International patent application number <u>PCT/KR00/01306</u>, and was amended on _____ (if any).</p> <p>I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.</p> <p>I acknowledge the duty to disclose all information known to be material to patentability in accordance with Title 37, Code of Federal Regulations, §1.36.</p> <p>I hereby claim priority benefits under Title 35, United States Code §119/365 of any foreign application(s) for patent or inventor's certificate or United States provisional application(s) listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:</p> <p>Prior Foreign or Provisional Application(s)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">COUNTRY</th> <th style="width: 30%;">APPLICATION NUMBER</th> <th style="width: 20%;">DATE OF FILING (day, month, year)</th> <th style="width: 30%;">PRIORITY CLAIMED</th> </tr> </thead> <tbody> <tr> <td>Republic of Korea</td> <td>P.1999-50958</td> <td>November 16, 1999</td> <td>YES <input checked="" type="checkbox"/> NO <input type="checkbox"/></td> </tr> <tr> <td>Republic of Korea</td> <td>P.2000-14367</td> <td>March 21, 2000</td> <td>YES <input checked="" type="checkbox"/> NO <input type="checkbox"/></td> </tr> <tr> <td></td> <td></td> <td></td> <td>YES <input type="checkbox"/> NO <input type="checkbox"/></td> </tr> </tbody> </table> <p>I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.36 which became available between the filing date of the prior application and the national or PCT international filing date of this application.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">UNITED STATES APPLICATION NUMBER</th> <th style="width: 30%;">DATE OF FILING (day, month, year)</th> <th style="width: 40%;">STATUS (patented, pending, abandoned)</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table> <p>I hereby appoint OSTROLENK, FABER, GERB & SOFFEN, LLP, and the members of the firm, Marvin C. Soffen - Reg. No. 17,542; Samuel H. Weiser - Reg. No. 18,510; Jerome M. Berliner - Reg. No. 18,653; Robert C. Faber - Reg. No. 24,322; Edward A. Melikian - Reg. No. 24,735; Stanley H. Lieberstein - Reg. No. 22,400; Steven I. Weisburd - Reg. No. 27,409; Max Moskowitz - Reg. No. 30,576; Stephen A. Soffen - Reg. No. 31,063; James A. Finder - Reg. No. 30,173; William O. Gray, III - Reg. No. 30,944 and Louis C. Dujmich - Reg. No. 30,625, as attorneys with full power of substitution and revocation to prosecute this application, to transact all business in the Patent & Trademark Office connected therewith and to receive all correspondence.</p> <p>SEND CORRESPONDENCE TO: OSTROLENK, FABER, GERB & SOFFEN, LLP DIRECT TELEPHONE CALLS TO: (212) 382-0700 1180 AVENUE OF THE AMERICAS NEW YORK, NEW YORK 10036-8403</p> <p>I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">FULL NAME OF SOLE OR FIRST INVENTOR Young Sang CHO</td> <td style="width: 30%;">INVENTOR'S SIGNATURE <i>Cho Yongsang</i></td> <td style="width: 40%;">DATE March 23, 2001</td> </tr> <tr> <td>RESIDENCE Seoul, Republic of Korea</td> <td colspan="2">COUNTRY OF CITIZENSHIP Republic of Korea</td> </tr> <tr> <td colspan="3">POST OFFICE ADDRESS 88-8, Singil 1-dong, Yeongdeungpo-gu, Seoul, 150-051</td> </tr> <tr> <td colspan="3">Republic of Korea</td> </tr> <tr> <td>FULL NAME OF SECOND JOINT INVENTOR (IF ANY) Jae Chul OH</td> <td>INVENTOR'S SIGNATURE <i>oh jae chul</i></td> <td>DATE March 23, 2001</td> </tr> <tr> <td>RESIDENCE Gyeonggi-do, Republic of Korea</td> <td colspan="2">COUNTRY OF CITIZENSHIP Republic of Korea</td> </tr> <tr> <td colspan="3">POST OFFICE ADDRESS 304, Hanaro Plaza Building, 2033, Daehwa-dong, Ilsan-gu, Gyeonggi-do, Republic of Korea</td> </tr> <tr> <td>FULL NAME OF THIRD JOINT INVENTOR (IF ANY) Teck Joo MIN</td> <td>INVENTOR'S SIGNATURE <i>Teck Joo Min</i></td> <td>DATE March 23, 2001</td> </tr> <tr> <td>RESIDENCE Seoul, Republic of Korea</td> <td colspan="2">COUNTRY OF CITIZENSHIP Republic of Korea</td> </tr> <tr> <td colspan="3">POST OFFICE ADDRESS 12-1503, Hansin Apt., Sanggye 5-dong, Nowon-gu, Seoul, 139-205, Republic of Korea</td> </tr> </table>			COUNTRY	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED	Republic of Korea	P.1999-50958	November 16, 1999	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	Republic of Korea	P.2000-14367	March 21, 2000	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>				YES <input type="checkbox"/> NO <input type="checkbox"/>	UNITED STATES APPLICATION NUMBER	DATE OF FILING (day, month, year)	STATUS (patented, pending, abandoned)													FULL NAME OF SOLE OR FIRST INVENTOR Young Sang CHO	INVENTOR'S SIGNATURE <i>Cho Yongsang</i>	DATE March 23, 2001	RESIDENCE Seoul, Republic of Korea	COUNTRY OF CITIZENSHIP Republic of Korea		POST OFFICE ADDRESS 88-8, Singil 1-dong, Yeongdeungpo-gu, Seoul, 150-051			Republic of Korea			FULL NAME OF SECOND JOINT INVENTOR (IF ANY) Jae Chul OH	INVENTOR'S SIGNATURE <i>oh jae chul</i>	DATE March 23, 2001	RESIDENCE Gyeonggi-do, Republic of Korea	COUNTRY OF CITIZENSHIP Republic of Korea		POST OFFICE ADDRESS 304, Hanaro Plaza Building, 2033, Daehwa-dong, Ilsan-gu, Gyeonggi-do, Republic of Korea			FULL NAME OF THIRD JOINT INVENTOR (IF ANY) Teck Joo MIN	INVENTOR'S SIGNATURE <i>Teck Joo Min</i>	DATE March 23, 2001	RESIDENCE Seoul, Republic of Korea	COUNTRY OF CITIZENSHIP Republic of Korea		POST OFFICE ADDRESS 12-1503, Hansin Apt., Sanggye 5-dong, Nowon-gu, Seoul, 139-205, Republic of Korea		
COUNTRY	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED																																																												
Republic of Korea	P.1999-50958	November 16, 1999	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>																																																												
Republic of Korea	P.2000-14367	March 21, 2000	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>																																																												
			YES <input type="checkbox"/> NO <input type="checkbox"/>																																																												
UNITED STATES APPLICATION NUMBER	DATE OF FILING (day, month, year)	STATUS (patented, pending, abandoned)																																																													
FULL NAME OF SOLE OR FIRST INVENTOR Young Sang CHO	INVENTOR'S SIGNATURE <i>Cho Yongsang</i>	DATE March 23, 2001																																																													
RESIDENCE Seoul, Republic of Korea	COUNTRY OF CITIZENSHIP Republic of Korea																																																														
POST OFFICE ADDRESS 88-8, Singil 1-dong, Yeongdeungpo-gu, Seoul, 150-051																																																															
Republic of Korea																																																															
FULL NAME OF SECOND JOINT INVENTOR (IF ANY) Jae Chul OH	INVENTOR'S SIGNATURE <i>oh jae chul</i>	DATE March 23, 2001																																																													
RESIDENCE Gyeonggi-do, Republic of Korea	COUNTRY OF CITIZENSHIP Republic of Korea																																																														
POST OFFICE ADDRESS 304, Hanaro Plaza Building, 2033, Daehwa-dong, Ilsan-gu, Gyeonggi-do, Republic of Korea																																																															
FULL NAME OF THIRD JOINT INVENTOR (IF ANY) Teck Joo MIN	INVENTOR'S SIGNATURE <i>Teck Joo Min</i>	DATE March 23, 2001																																																													
RESIDENCE Seoul, Republic of Korea	COUNTRY OF CITIZENSHIP Republic of Korea																																																														
POST OFFICE ADDRESS 12-1503, Hansin Apt., Sanggye 5-dong, Nowon-gu, Seoul, 139-205, Republic of Korea																																																															

☐ CONTINUED ON PAGE 2